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ABSTRACT

A review of the literature was conducted to summarize how characteristics of individual readers help to determine the nature and quality of their comprehension of specific texts and to discuss how this knowledge might be used by teachers to promote effective reading in their classes. Three dimensions of readers were identified as being causally related to comprehension. First, readers differ in terms of what they know. Readers who are highly familiar with the topic about which they are reading and or the organizational structure of the text they are reading comprehend better than those readers who are less familiar with the topic and organizational structure. Second, readers differ in terms of the cognitive skills and strategies they have available for use while they are reading. Some readers have fully internalized a given strategy, such as predicting what should logically come next, others have done this only partially, and still others lack this strategy altogether. Third, readers differ in terms of their motivational orientations toward the text. Readers' attitudes about their comprehension abilities can be at least as important in determining their comprehension of specific texts as their actual comprehension abilities. Teachers who recognize the transactional nature of reading comprehension understand that characteristics of individual readers differentially influence their reading comprehension. These are the teachers who will be able to create reading lessons and programs to serve the varied needs of each reader in their classrooms. (One hundred twenty-nine references are included.) (MG)

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Understanding How Reader Characteristics Affect Comprehension of Text

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RUNNING HEAD: Reader Characteristics

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Understanding How Reader Characteristics Affect Comprehension of Text

If Louise Rosenblatt (1938; 1978) was not the first person to recognize the importance of the reader in studies of reading, she established herself among the first when she wrote in 1938,

> There is no such thing as a generic reader. . . . The reading of any work of literature is, of necessity, an individual occurrence involving the minds and emotions of a particular reader (1978, p. xii).

Her transactional theory of literary response posits an interdependence between reader and text, each one shaping the other until a unified interpretation results. The analogy most often drawn is with a construction site. The builders are the readers, using blueprints (or texts) to create their buildings (or their interpretations). In the hands of other builders (or readers), the blueprints (or texts) would lead to similar, but different, constructions. The importance of the reader, therefore, is equal to the importance of the text. Just as blueprints need builders to transform them into viable edifices, so texts need readers to transform them into viable interpretations. Those of us wishing to understand this process would do well to remember that each reader is unique; each brings a learned and limited set of knowledge structures, cognitive processes, and personal attitudes to a reading situation. The purpose of this

literature review is to delineate what the field of reading currently knows about how characteristics of individual readers influence their reading comprehension and to discuss how teachers might use this knowledge to promote effective reading in their classrooms.

Proxy Variables

Early investigations into the characteristics of individual readers tend to relate reading ability to rather global characteristics of readers, such as SES (Abelson, Zigler, and Deblasi, 1974), self-concept (Cohn and Kornelly, 1970; Wattenberg and Clifford, 1964), ethnic background (Singer, Gerard, and Redfearn, 1975), and gender (Asher, 1977). While such studies generally find moderate to high relationships between these global variables and some operational definition of reading comprehension, they do not go very far toward helping us understand why the relationships exist. In other words, by looking only to the relationship between reading comprehension and global variables such as SES, ethnic background, and gender, we will not progress beyond mere speculation about the causes that undergird the relationships we find.

Variables such as SES, ethnic background, and gender are best understood as proxy variables, stand-ins correlated with the actual causes for high and low reading ability, successful and unsuccessful reading performances. Although

investigations into the relationships between proxy variables and reading comprehension do little to advance our understanding of the causes of reading comprehension successes and failures, there continue to be many such investigations (Bader and Wisendanger, 1986; Carswell and White, 1983; Dummett, 1984; Hogrebe, et al., 1984; Kirsch and Jungeblut, 1986; Ortiz, 1986; Porter, 1982; So and Chan, 1982; Zafirau, 1983; Zafirau and Fleming, 1983).

Another type of investigation employing proxy variables focuses on how the early literacy experiences of children from low SES or minority backgrounds differ from the experiences of middle class, caucasian children (Heath, 1983). Studies of this sort typically explain later success and failure at reading in terms of differences between early literacy experiences (Dolan, 1983; Galda and Pellegrini, 1985; Goldenberg, 1984; Greaney, 1986; LaBuda, 1985; Nebor, 1986; Miller, 1986; Shields, 1983; Silvern, 1985; Taylor, 1983; Toopping and Wolfendale, 1985; Tovey and Kerber, 1986; Volger, 1984; Wadsworth, 1985). While these studies have been highly successful at helping us to understand general patterns of preliteracy experiences that are more or less conducive to developing comprehension competence, they have not been very helpful at indentifying the specific characteristics of individuals that are causally related to their comprehension of specific texts.

Reader Characteristics

The remainder of this review will focus exclusively on how specific characteristics of individual readers promote or thwart their comprehension of texts. We will focus on three dimensions of readers: their knowledge structures, their cognitive processes, and their personal attitudes. Although these three dimensions are not completely independent of each other, for the purposes of this review we will treat them separately. It should be remembered, however, that changes in one dimension of a reader could cause changes in one or both of the other dimensions.

Knowledge Structures

One important difference between readers is their knowledge base or cognitive schema (Rumelhart, 1977; Tierney and Pearson, 1986). People differ in terms of what they know, how much they know, and how well-integrated their knowledge is. The bulk of studies completed in this area concern themselves with the effects of readers' knowledge about the content of a reading passage on their comprehension of that passage (Alderson and Urquhart, 1984; 1985; Alvarez, Risko, Cooper, and Hall, 1983; Beck, 1985; Gillis, 1983; Langer, 1984; Phillips-Riggs, 1981; Smith, 1983). The recurring finding in these studies is that an extensive and well-integrated schema about the topic of a passage allows readers to comprehend that passage better than readers who have similar reading skill but a less well-developed schema

about the topic. Apparently, readers who are familiar with the topic of a passage are better able than their peers who are less familiar with the topic to make inferences about information implicitly stated in the passage (Johnston, 1983; Pearson, Hansen, and Gordon, 1979). Interestingly, a well-developed prior knowledge does not seem to have a comparable effect on the comprehension of information explicitly stated in the passage.

Most recently, studies of the effects of prior knowledge of topic on readers' comprehension have focused on second language learners (Carrell, 1983a; 1983b; Johnson, 1982; Kitai, 1987; Lee, 1986; Mohammed and Swales, 1984; Perkins, 1983). For example, Haus and Levine (1985) found that the effect of prior knowledge about baseball on Spanish students' comprehension of a passage about baseball written in Spanish was even greater than the effect of the students' proficiency in Spanish. The issue of prior knowledge is especially important for second language learners, because they not only deal with the challenges of learning a new linguistic code, but also the challenges of understanding a new culture. Afterall, cultural differences are differences in prior knowledge about how the world works. And cultural differences apparently affect second language learners' comprehension of texts steeped in the new and unfamiliar culture about which they are learning (Pandolfo, 1985;

Education Commission of the States, 1982).

In addition to differing in terms of what they know about the content or substance of a reading passage, readers also differ in terms of their familiarity with the organizational form or structure of the passage. Johnston (1983) refers to these forms as "conventional macrostructures" (p. 23). However, unlike studies on readers' prior knowledge about the topic of a text, studies on text structure tend not to be conceptualized in terms of differences in readers. Rather, they tend to frame the issue of text structure in terms of how differences in the text generally promote or thwart all readers' comprehension. (For an exception see Winograd, 1984.)

Thus, studies have shown that readers comprehend well-formed texts (Stein and Glenn, 1978), as well as texts that mirror a natural order of events (Brown and French, 1976), better than other texts. In addition, texts that are highly structured (Penning, 1985), coherent (Meyer, 1986) well-elaborated (Roller, 1986), and full of genre clues (Rowe and Rayford, 1987; Stein and Nezworki, 1978) are easier to comprehend than other texts. While these studies do not specifically address individual differences in readers, they do suggest that readers comprehend texts best when the organizational form or structure of texts is made explicit and readily available to them. In other words, readers who

can easily recognize the organizational structure of a given text ought to be able to comprehend that text better than readers who cannot recognize the structure. In all likelihood, readers will differ in the ability to recognize various text structures. Structures that are familiar to them should be more recognizable than structures that are not familiar. Indeed, instructional studies focusing on the effects of familiarizing students with different text structures (e.g., narrative, compare and contrast, expository) on their comprehension of texts employing those structures support the contention that differences in readers' understanding of text structures is an important factor in reading comprehension (Beck and McKeown, 1984; Raphael and Kirschner, 1985).

This review of the effects of readers' prior knowledge on their comprehension of texts has focused exclusively on differences in readers' knowledge about the topical and organizational structure of specific texts. Obviously, there are other sorts of knowledge requisite for effective reading. For example, young children's awareness of print conventions (Clay, 1979; Evans, Taylor, and Blum, 1979; Downing, Ayers, and Schaefer, 1983; Harlin, 1983), as well as their awareness of the phonemic system (Bradley and Bryant, 1983; Hollingsworth, 1983; Juel, Griffith, and Gough, 1986), is related to early reading ability. But these awarenesses are

actually prerequisites for the effective comprehension of any text rather than characteristics of readers that will differentially influence the reading of particular texts.

Cognitive Processes

While some prior knowledge about the topical and organizational structure of a text may be necessary for comprehension to occur, it is not sufficient. Phillips (1987) found that when readers' inferencing skills are weak, no amount of background knowledge is helpful in improving their comprehension. In other words, having a well-developed prior knowledge about features of a given text only means that readers will be in a position to use the reading skills and strategies they have in their cognitive repertoire. Therefore, differences in the cognitive skills and strategies readers have available for use when reading should also differentially influence their reading comprehension.

We will begin a consideration of how readers differ in terms of their cognitive repertoires by looking at two types of cognitive processes: skills and strategies. For the purposes of this review skills are those cognitive processes that experienced readers would typically carry out unconsciously or automatically, while strategies are those cognitive processes that they would use somewhat more intentionally. The reader of this review should remember that this division of cognitive processes into skills and

strategies is meant to be flexible. Certain cognitive processes actually might fall into either category depending upon the circumstances in which they occur.

Daneman's (in press) review of the literature entitled "Individual Differences in Reading Skills" deals almost exclusively with the unconscious or automatic aspects of the reading process. In that review, she outlines the literature showing that poor comprehenders recognize words more slowly (Stanovich, Cunningham, and Freeman, 1984), access lexical content of words from long term memory more slowly (Baddeley, Logie, Nimmo-Smith, and Brereton, 1985; Palmer, MacCleod, Hunt, and Davidson, 1985), and recode printed words and non-words into phonological representations less effectively (Frederickson, 1978; Jorm and Share, 1983; Seymour and Propodas, 1980; Stanovich, 1986) than good comprehenders.

But just as prior knowledge alone is not sufficient for effective reading comprehension to occur, so these word recognition skills are also not sufficient (Just and Carpenter, 1987; Stanovich, 1986). What they allow readers to do, however, is use what Daneman (in press) calls their "integrative processes." Integrative processes involve making links between information encountered in a text and other pieces of information in that same text, as well as pieces of information coded in readers' long-term memory (Lorch, Lorch, and Morgan, 1987; Palinscar and Brown, 1984).

The conditions must be right for readers to make these links. Apparently, when readers' word recognition processes are automatic and, therefore, do not place a heavy burden on their short term memory systems, then they have more working memory capacity to use when engaged with the more complex integrative processes, such as making inferences (Oakhill, 1982; Oakhill and Yuill, 1986) and determining referents for pronouns (Daneman and Carpenter, 1983; Oakhill and Yuill, 1986).

The picture of reading comprehension beginning to emerge in this review suggests that when readers have automated word recognition skills, as well as well-developed schemas for both the topical and organizational structure of a specific text, they should be able to use the integrative processes they have developed to link new information to existing (or old) information so that they can gain an understanding of the text. Thus, readers can vary in terms of the ease with which they recognize words, the extent and nature of their prior knowledge about the topical and organizational structure of the text, and the availability of the integrative processes needed to comprehend text.

For all readers, good as well as poor, there are times when one or more of these systems malfunction. All readers will encounter words they cannot pronounce or understand, topics about which they know little, and poorly organized

texts. Any one of these challenges could cause even experienced readers to have difficulty making the connections between new information in the text and existing information elsewhere in the text or in their long-term memories. It is when those connections are not made that reading comprehension breaks down. Another difference between good and poor readers has to do with how they consciously work to prevent comprehension breakdown when it does occur. Readers who consciously work to promote their own comprehension of text engage in strategic reading (Kaufman and Randlett, 1983; Paris, Wasik, and van der Westhuizen, in press). Paris, Wasik, and Turner (in press) define strategic reading as "the selective and flexible use of deliberate actions to enhance comprehension."

In order to function effectively, strategic readers must be able to do two things. First, they must recognize their reading comprehension breakdowns when they occur. Recognition of comprehension breakdowns requires an internalized monitoring function, which mobilizes readers to make sense of the information they are encountering in the text (Wagoner, 1983). Once a comprehension problem is recognized, readers must also know what to do to repair it. In other words, they must know what cognitive strategies might help them to make sense of the problem text, how those strategies function, and when to use those strategies (Paris,

Lipson, and Wixson, 1983). Readers who lack or do not employ these monitoring and repair functions are nonstrategic readers. They are less able than strategic readers to detect semantic inconsistencies in text (Garner, 1980; Garner and Kraus, 1982; Grabe and Mann, 1984), and when they do discover such inconsistencies, they are less likely to backtrack in the text in search of a way to resolve the problem (Garner and Reis, 1981). Instead, they keep right on reading the text in a linear fashion.

Personal Attitudes

Thus far the discussion presented in this paper has focused on the presence or absence in readers of a variety of forms of competence. Readers either have or do not have sufficient prior knowledge, have or do not have automated word recognition skills; they are either skilled or not skilled at using integrative processes, skilled or not skilled at monitoring and repairing their own comprehension. Yet another important difference between readers has less to do with some absolute level of competence they may have and more to do with their motivational orientations toward reading (Paris and Oka, 1986). To what extent do young readers work to develop their competence in reading? And to what extent do readers choose to make use of the reading competencies they already have? These are the questions that we will turn to now.

Reader Characteristics

The more general body of literature on human motivation points to two sets of self-perceptions as important determinants of motivated behavior: self-perceptions of competence (Harter, 1985) and self-perceptions of control (Connell, 1985). Several investigations of students' motivational orientations toward reading have identified perceived control as an important factor in explaining the nature and extent of students' engagement with reading tasks (Borkowski, Carr, Rellinger, and Pressley, in press; Butkowsky and Willows, 1980; Covington, 1983; Wigfield and Asher, 1983). A recurring finding in these studies is that highly motivated readers attribute their comprehension failures, when they do occur, to lack of effort, something that is under their control. That is, they can choose to increase or decrease their effort.

This conception of control is one that presumes students' self-perceptions of competence. Individuals who believe that their successes will come with effort must also believe that they have the capability to succeed. If they do not perceive themselves as being capable of successfully completing reading tasks, they will also not perceive themselves as being in control of those tasks (Spaulding, 1987). Therefore, students who perceive themselves as being incompetent readers who cannot control their own reading skills and strategies probably are not likely to be highly

motivated to use the reading competencies they do have. Thus, important differences between student readers exist not only with respect to their actual reading competence, but also with respect to their self-perceived reading competence.

Helping Students Be Successful Readers

The overriding reason for trying to understand how characteristics of individual readers are related to their reading comprehension is so that teachers might better understand how to help their students be successful comprehenders. Of major interest would be questions about how to vary instructional programs and practices so that they fit the different characteristics of individual readers in a single class. For example, teachers should recognize that readers whose strategies are highly developed but whose prior knowledge about the topic of a given text is weak will likely benefit from a very different sort of reading lesson than will readers who prior knowledge of the topic is well-developed but whose comprehension monitoring strategies are weak. While the literature reviewed in this paper tends not to offer specific prescriptions for practice, it can be used to reflect on the challenge of tailoring reading programs and instruction to characteristics of individual readers.

One of the general principles of effective reading instruction that could be inferred from this review is that teachers should design lessons so as to promote all students'

successful experiences with text (Resnick and Robinson, 1975). If students do not perceive themselves as being relatively competent readers, they will not be motivated to employ the reading competencies they do have. While this instructional principle is a general one applying to all students, it could be operationalized in very different ways for different students at different times. For example, students whose word recognition skills and comprehension monitoring and repair strategies are not sufficiently automated may benefit from a self-directed, silent-reading program in which they are encouraged to read books and other materials of high interest to them (Pugh and Ulijn, 1981). What these students need is the opportunity to practice their word recognition skiils and comprehension monitoring and repair strategies while reading texts that comfortably match their existing knowledge structures. When allowed to choose their own reading material, most students will select materials they will be able to read successfully without assistance (Asher, 1979; Wigfield and Asher, 1983). They will make, in other words, a good match between their own prior knowledge and the topical and organizational features of the texts they choose to read. Many popular self-directed reading programs (Atwell, 1987; Fader and McNeil, 1968) are designed around this principle of promoting successful reading experiences through student choice of reading

material. While some might criticize these self-directed reading programs for not providing direct instruction in reading skills and strategies (Rosenshine, 1979), such programs do appear to serve a function beyond providing a motivational force for reading (Crafton, 1983). The articles reviewed in this paper suggest that students who read a wide array of self-selected materials may have important opportunities to practice and automate their existing reading skills (word recognition, inferencing, integrating new information with existing information) and strategies (comprehension monitoring and repairing).

Not all reading activities in school can be based on student self-selection of reading material though. Content area teachers, in particular, will want to assign texts dealing with topics unfamiliar to at least some of their students. Afterall, the purpose of reading a chapter in a history or science textbook is to learn something new, to make the unfamiliar more familiar. When a sufficient match between students' prior knowledge and their required readings cannot be made, then teachers need to intervene with some form of instructional support aimed at improving the match between reader and text (Spaulding, 1987; Spaulding, in press). Numerous instructional activities have been designed to build or enhance readers' prior knowledge of the topical (Beck, 1986; Beck and McKeown, 1987; 1984; Binkley, 1986;

Croll and others, 1986; Dean and Enemoh, 1983; Floyd and Carrell, 1987; Graves and others, 1985; Gray, 1984; Langer, 1984; 1982; 1981; Langer and Purcell-Gates, 1985; Melendez and Pritchard, 1985; Obah, 1983; Weisenback, 1987) and organizational (Duffelmeyer and others, 1987; Raphael and Kirschner, 1985; Weisenbach, 1987) features of a text. These teaching practices function as a sort of instructional scaffold aimed at building and elaborating readers' prior knowledge, and thereby helping them deal effectively with texts and tasks that would otherwise be too difficult for any meaningful learning to occur (Applebee and Langer, 1983).

When students lack specific reading skills and strategies altogether, then instructional practices must do more than simply create a good match between reader and text. What is needed in such situations is activities that actually promote the development of new reading skills and strategies (Gordon and Pearson, 1983). In order for students to develop these new competencies, they usually must do more than observe others using them. Most students will need more extensive interventions focusing not only on how to carry out specific strategies but also on the instrumental value of those strategies (Schunk and Rice, 1987) and procedures for self-monitoring their use of those strategies (Carr and others, 1983). The practice of reciprocal teaching advanced by Palincsar and Brown (1984) is an example of an

intervention that goes beyond modeling the targeted strategies for the reader. In that instructional program students work in groups, exchanging leader and follower roles as they collaborate to teach each other predicting, questioning, clarifying, and summarizing strategies. The students in these groups not only observe others engage in these strategies, but they also practice the strategies themselves, receive feedback on their use of the strategies, and provide feedback to other students on their use of the strategies. The ongoing group work involved in reciprocal teaching gives students the specific models, practice opportunities, and time to gradually internalize the targeted reading strategies.

Conclusion

The purpose of this review was to summarize the literature on how characteristics of individual readers help to determine the nature and quality of their comprehension of specific texts. Three dimensions of readers were identified as being causally related to comprehension. First, readers differ in terms of what they know. Readers who are highly familiar with the topic about which they are reading and/or the organizational structure of the text they are reading comprehend better than readers who are less familiar with the same topic and organizational structure.

Second, readers differ in terms of the cognitive skills

and strategies they have avialable for use while they are reading. Some readers have fully internalized a given strategy, such as predicting what logically should come next in the text, and they may use it automatically. Others have partially internalized the same strategy, but they may not have learned how to employ it without clues to remind them of its use and value. Still others may lack the strategy altogether.

Finally, readers also differ in terms of their motivational orientations toward reading. Readers' attitudes about their comprehension abilities can determine their comprehension of specific texts as much or more than their actual comprehension abilities. That is, readers who conceive of themselves as being capable of comprehending texts when they put forth sufficient effort are the ones who will use the reading comprehension skills and strategies they have in their cognitive repertoires. They are motivated to use their comprehension abilities to make sense of the texts they choose or are required to read.

Reading comprehension is a by-product of transactions between both reader and text. Teachers who recognize the transactional nature of reading comprehension understand that characteristics of individual readers differentially influence their reading comprehension. These are the teachers who will be able to create reading lessons and

programs to serve the varied needs of each reader in their classrooms.

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